

ACCESS TO RESEARCH INFRASTRUCTURES

HELMHOLTZ-CAS WORKSHOP, 26 September 2022

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Large Scale Facilities – Use, Access, Challenges

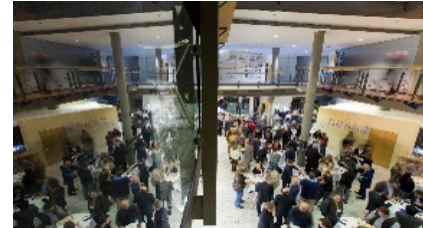
An example: light source BESSY II in Berlin

Users and user communities

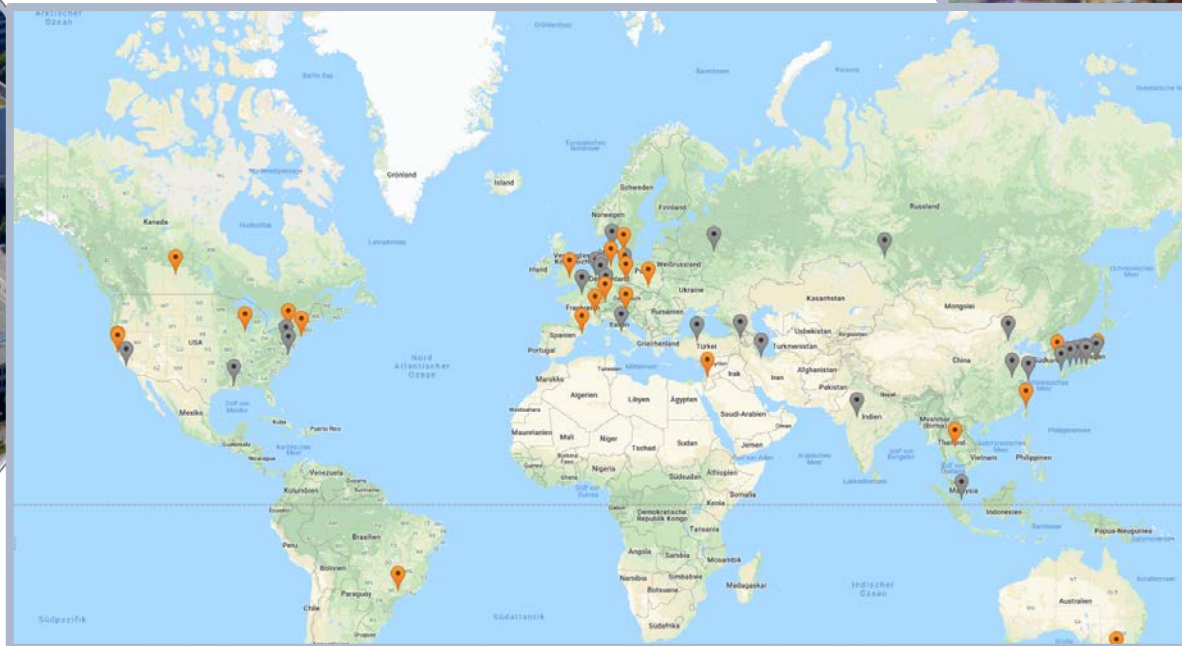
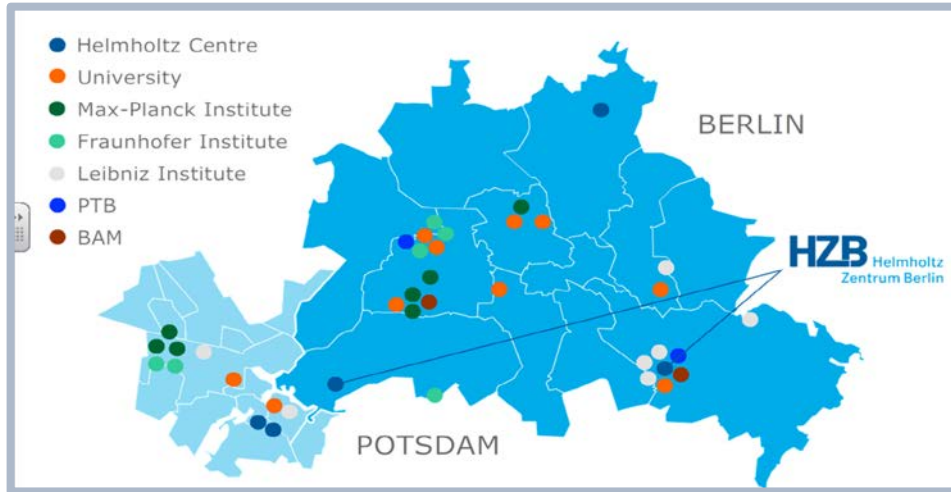
Changes over the last decades

Quality Management

What do the users say



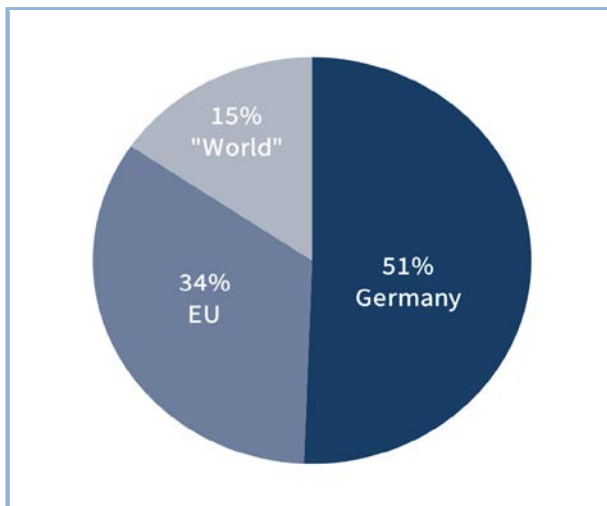
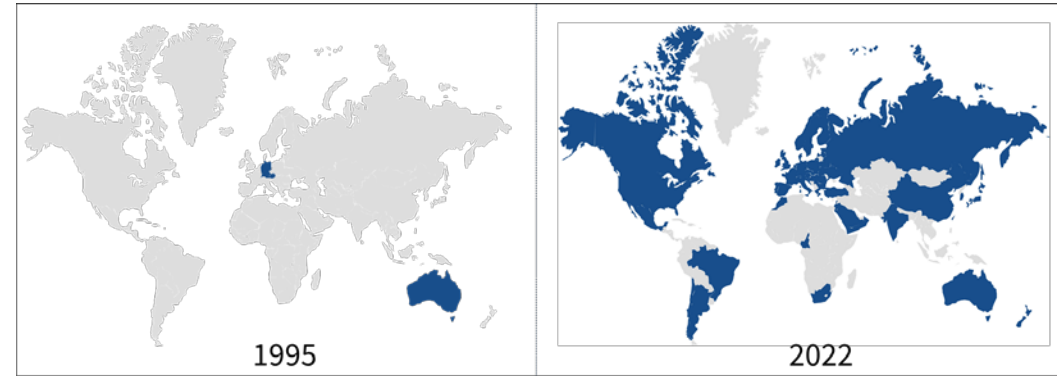
SYNCHROTRONS OF THE WORLD



The world is visting BESSY



Origin of proposals BESSY II
(2014 - today)

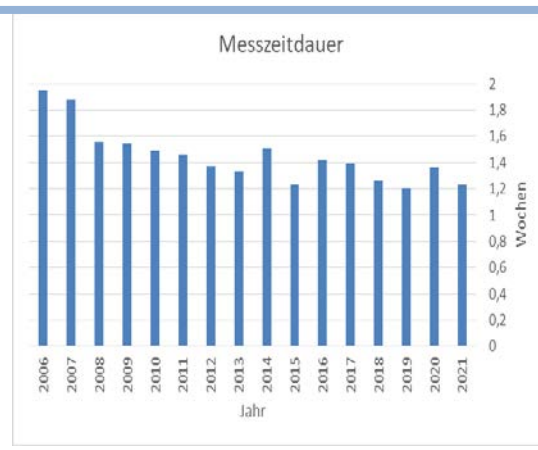
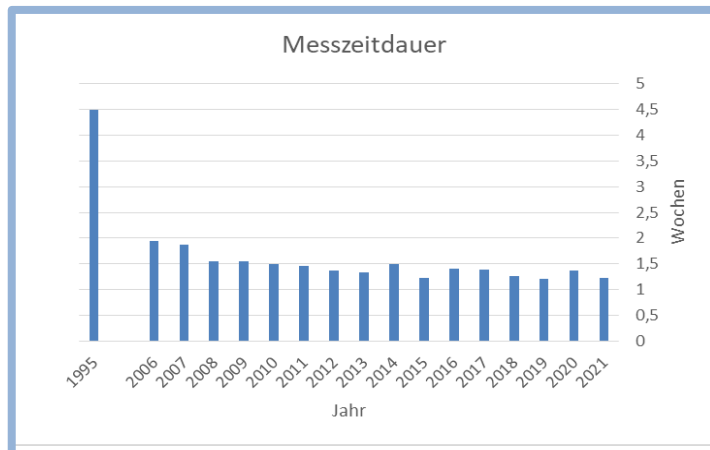
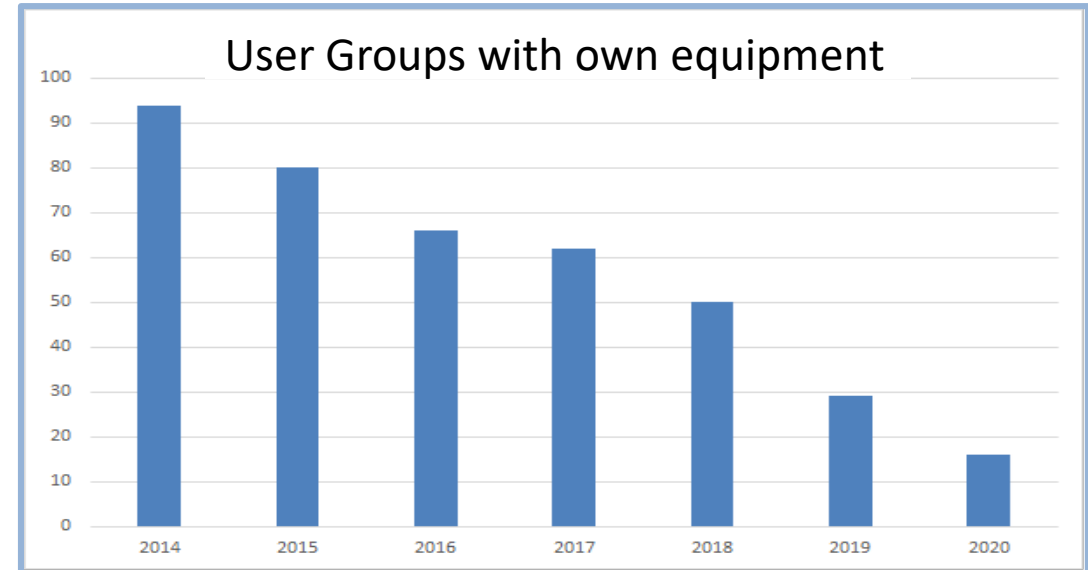
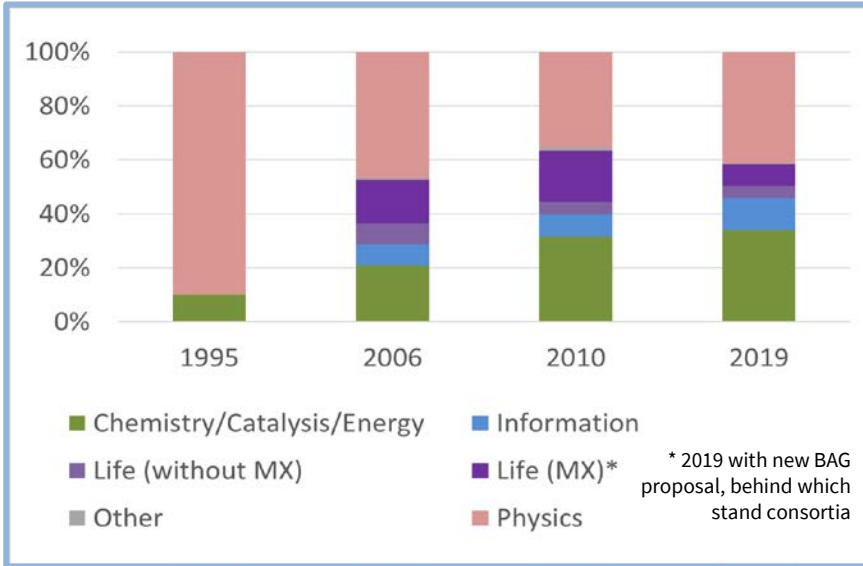


Average numbers per year (before Corona):

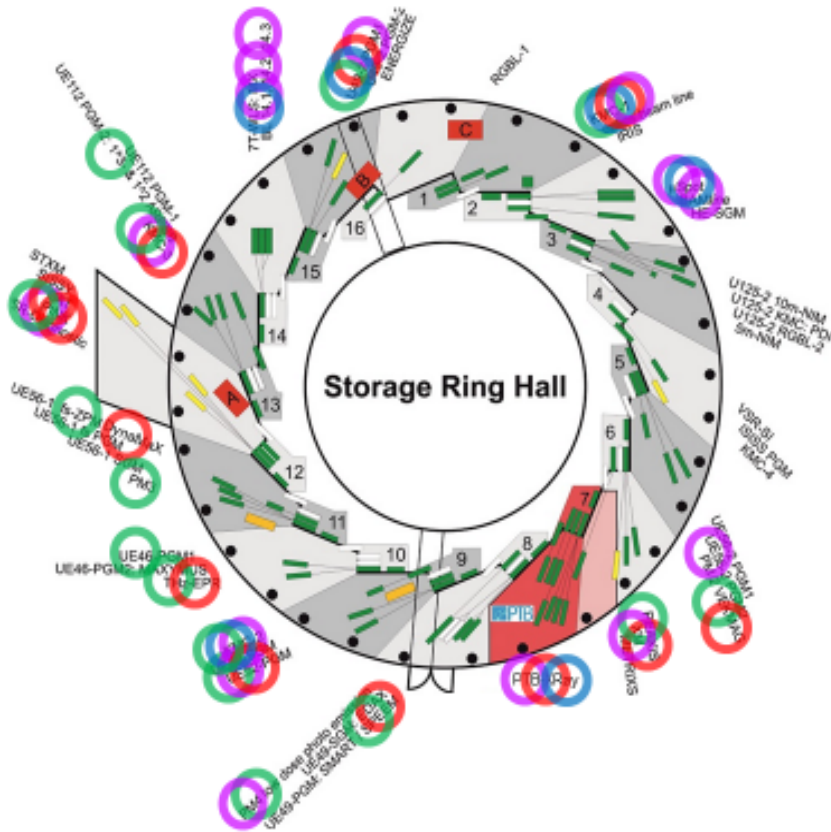
- More than 1200 proposals per year
- About 800 beamtime campaigns
- Up to 3000 user visits
- More than 11000 registered users
- 12000 overnight stays in the guesthouse
- More than 500 verified publications



The user community is changing



Sample Environment Activities 2021



Technical developments

Optimization and repair (of existing SE equipment)

Development (of novel SE)

Consulting (of new beamline projects)

User service

Provision and setup (of modular and complex SE)

Presently working for:
28 endstations (26 beamlines)

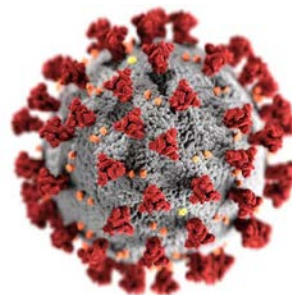
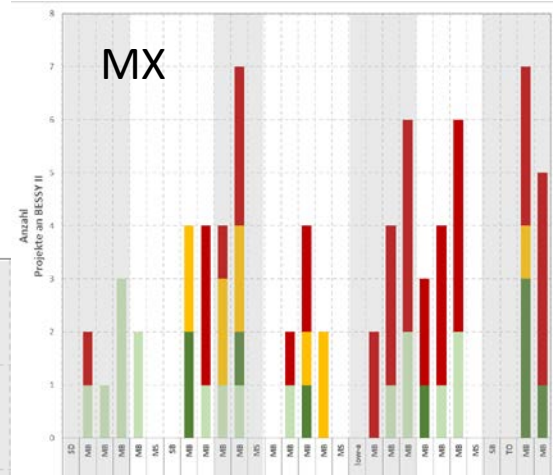
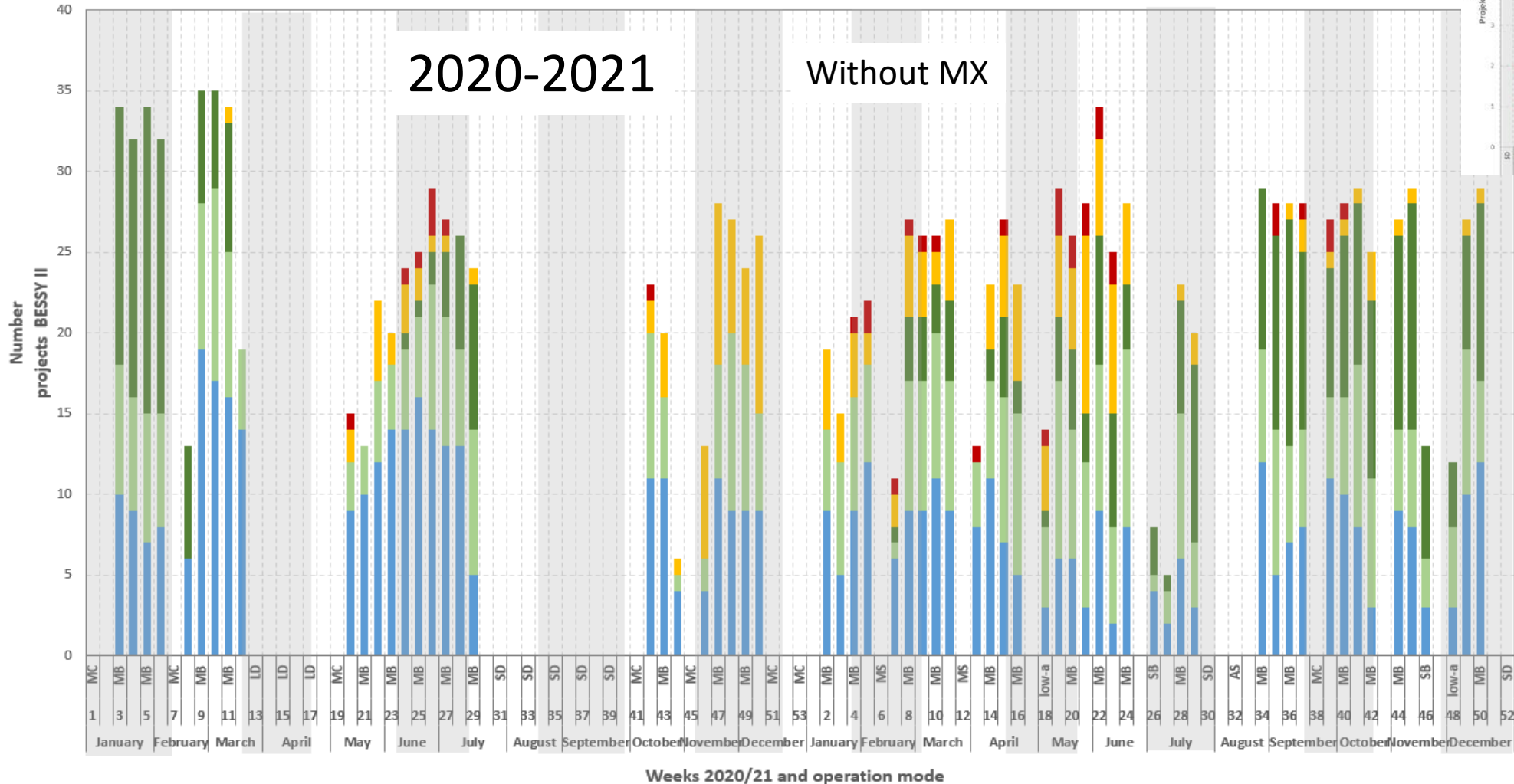
In contact with:
41 endstations (32 beamlines)

- More „non-synchrotron-expert-users“
- Shorter beamtimes
- Faster data acquisition
- More use of facility infrastructures
- More use of corresponding offline infrastructure
- More international users



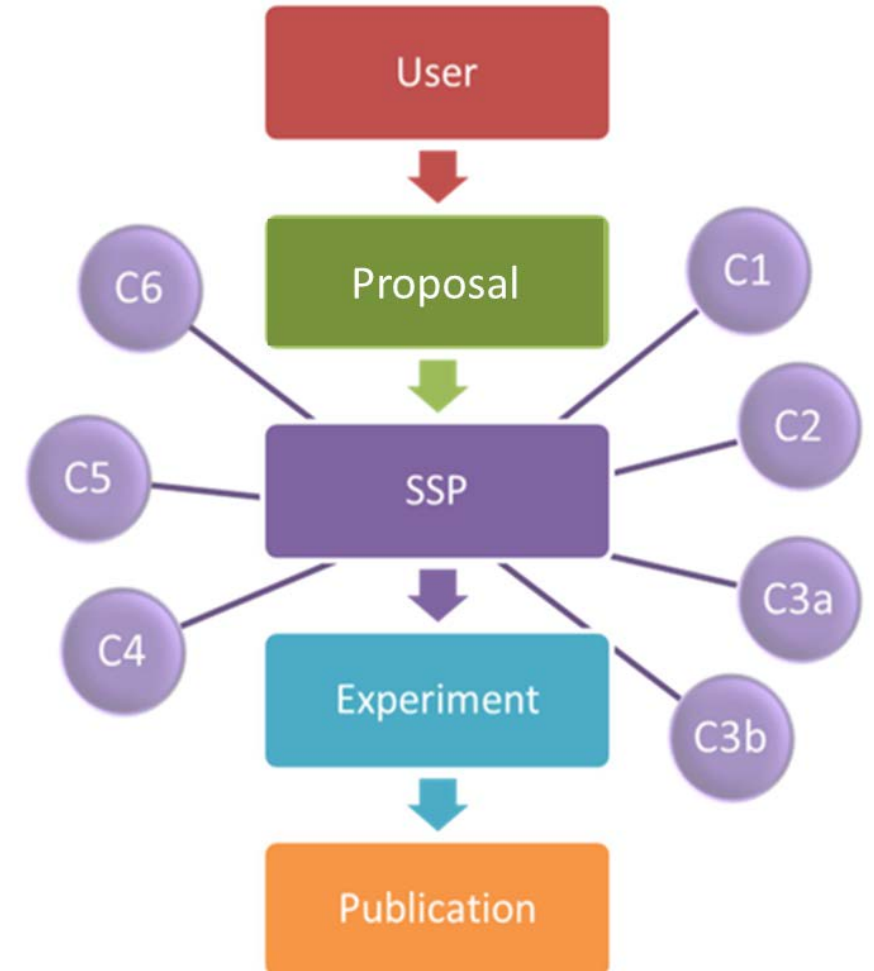
- More training
- More support from pre to post beamtime
- More flexibility
- More sample environment
- Holistic data handling

Remote Use during the pandemic



Blue: HZZB, light green: users from the Berlin area, dark green: external users (except Berlin), yellow: staff assisted beamtime, red: remote beamtime

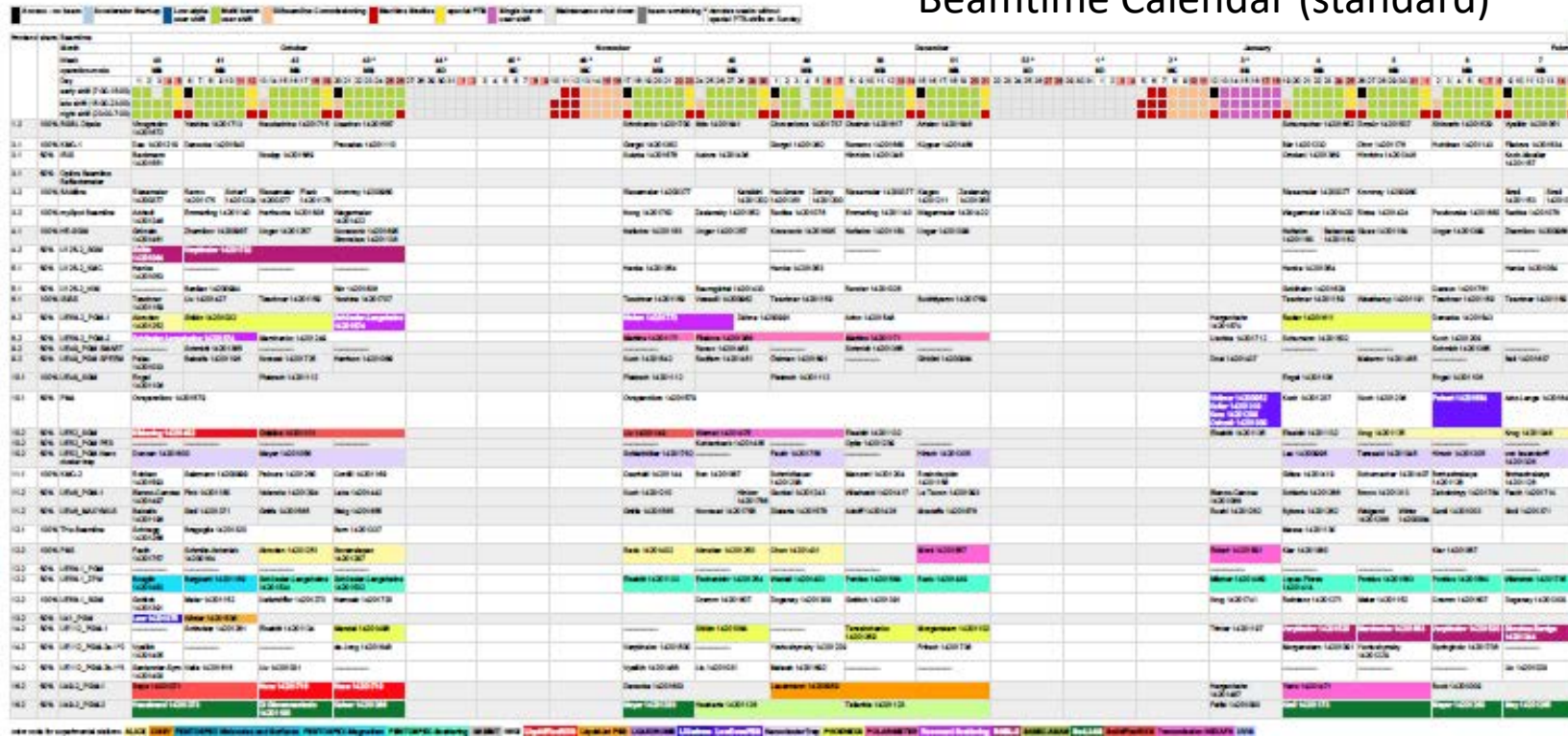
User and user management



Proposal, Evaluation, Beamtimeallocation, Scheduling, Feedback, Statistics, Funding etc. are managed in GATE

USER MANAGEMENT

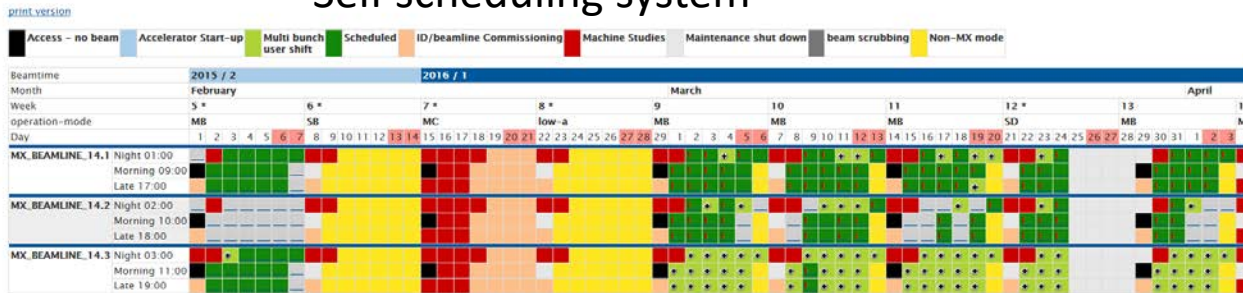
Beamtime Calendar (standard)

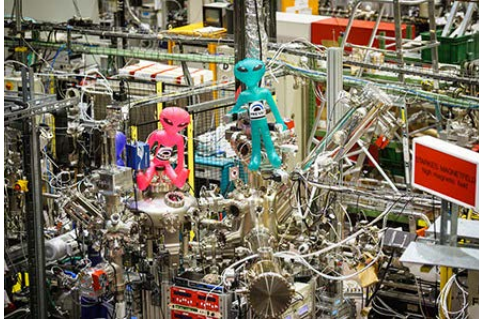


Calendars send automatic allocation/schedule notes to the users

GATE - Admin

Self scheduling system



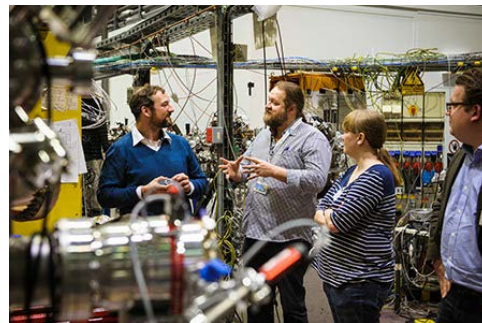


Hurrah, it's beamtime!



Stopp, sorry not yet... don't forget your:
user registration, access cards, safety instructions,
guesthouse reservation, ...

Now it's beamtime 😊



The view of the users

Time between proposal and beamtime too long – more flexibility desirable

Support for German users (travel, guesthouse) granted – no access costs

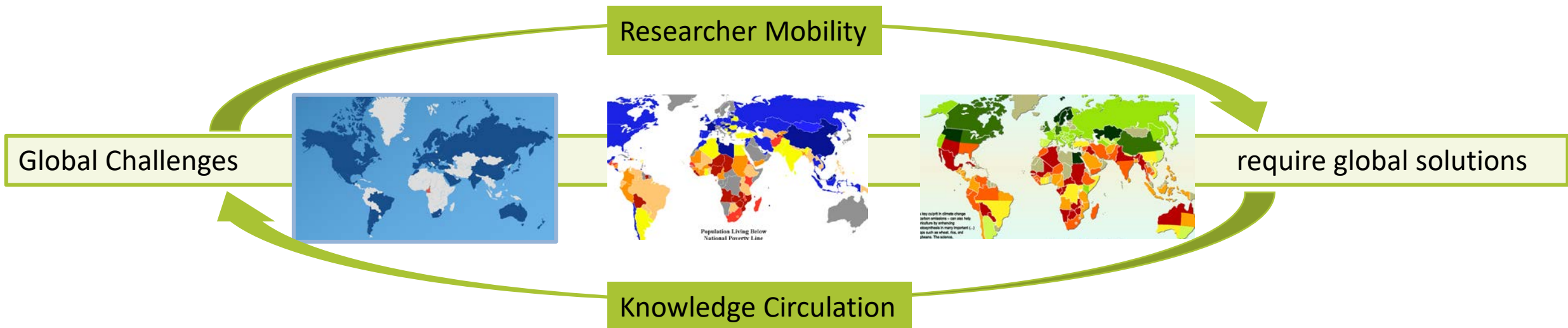
No access costs for European or World Users

however, no more travel and subsistence support via „trans national access (TNA) programmes

Consequence

already cancellation of beamtime or less proposals from poorer countries

Success of previous integration and inclusion programmes under jeopardy → topical/challenge oriented funding?



Standards and novelties

The increasingly divers user community need flexible access

- Standard access
- Inhouse access
- CRG Access

- Fast track access

- Urgent request

- BAG and CDA

- Proprietary access



- Standard evaluation process, Scientific Selection Panel

- Ad hoc evaluation (external referees)

- Direktors, Institutes

- Experts

- Contracts

For all types of access: they should be possible on site, staff assisted as well as fully remote

The BESSY II User Coordination has established and applies a Quality Management System for the

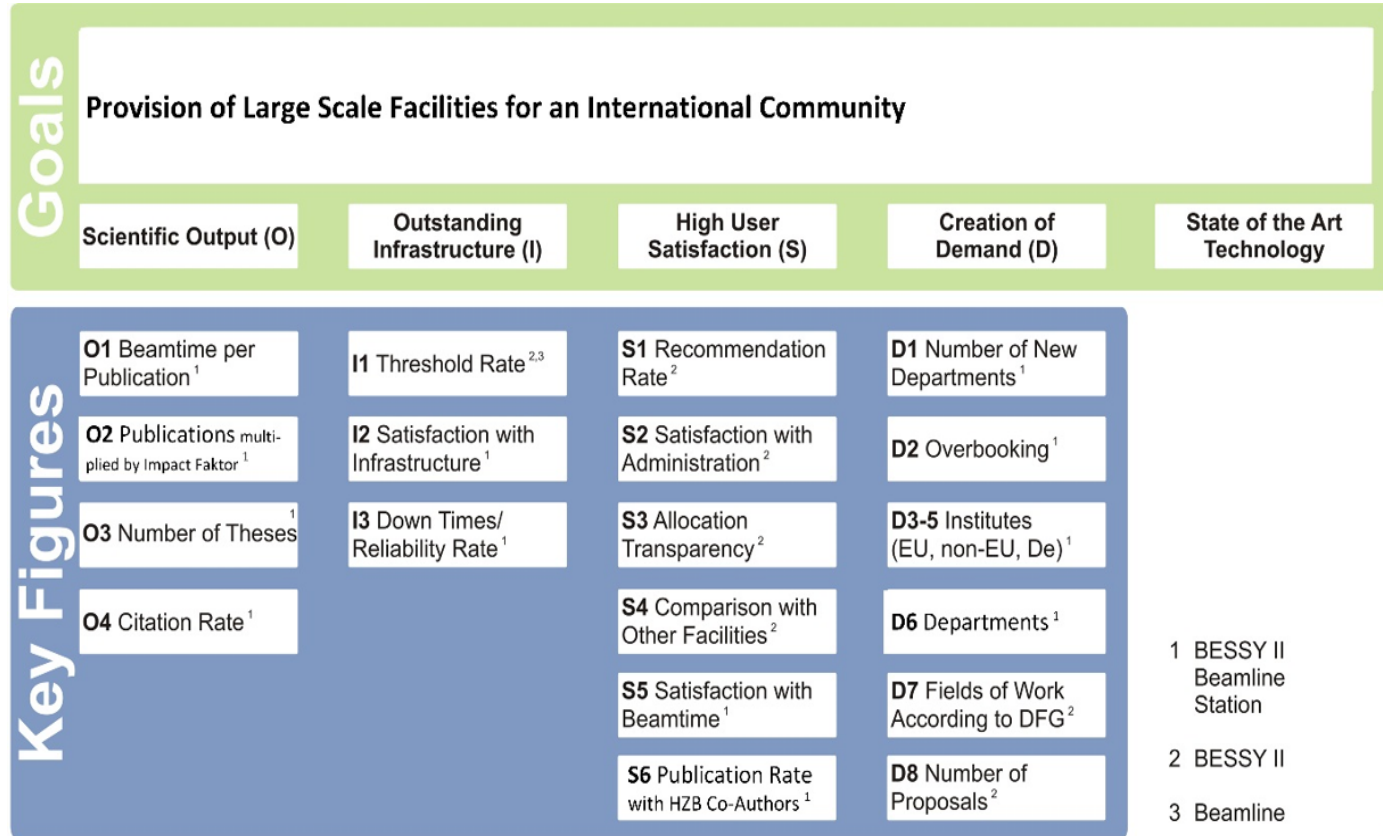
Coordination of and service For the use of scientific infrastructures.



The Quality Management is certified According ISO 9001:2015 (TÜV SÜD Service GmbH).

Performance Indicators

Certification and



Overview to Key Performance Indices (KPI) 2016 -2021

User feedback rate

2016: 80 %

2017: 68 %

2018: 64 %

2019: 48 %

2020: 39 %

2021: 64 %

Surveillance audit successfully passed in 2018, 2019, 2021

Recertification audit successfully passed in 2020



ISO 9001

Certified
Quality Management System

www.tuv-sud.com/ms-cert

A2 Overview to Key Performance Indices (KPI) 2016 - 2021

	2016	2017	2018	2019	2020	2021
O: Scientific Output						
O1 Beamtime (Shifts \cong 8 hours) per Publication	21.7	26.9	20.3	20.9	15.7 ²	39.7 ³
O2 Publications multiplied by Impact Factor	2381	1896	2317	2228	2493	2770
O3 Number of Theses	14	15	42	27	23	17
O4 Citation Rate for Publications from 2013-2018	12.8	14.3	16.0	15.2	16.7	15.7
I: Outstanding Infrastructure						
I1 Threshold Rate (external/internal)	6.1/5.7	5.7/5.6	6.4/6.7	6.5/6.4	6.5/6.6	6.7/7.2
I2 Satisfaction with Infrastructure	91% (1.92)	95% (1.50)	96% (1.41)	95% (1.45)	96% (1.36)	96% (1.37)
I3 Down Times / Reliability Rate	98.0%	99.6%	96.0%	94.0%	97.0%	96%
S: High User Satisfaction						
S1 Recommendation Rate	94% (1.62)	95% (1.54)	95% (1.46)	95% (1.47)	96% (1.42)	96% (1.38)
S2 Satisfaction with Administration	92% (1.84)	95% (1.53)	94% (1.57)	94% (1.56)	95% (1.53)	95% (1.53)
S3 Allocation Transparency	90% (2.02)	90% (2.01)	90% (1.97)	91% (1.85)	89% (2.11)	90% (2.00)
S4 Comparison with Other Facilities	91% (1.92)	92% (1.84)	92% (1.79)	93% (1.71)	91% (1.94)	92% (1.82)
S5 Satisfaction with Beamtime	91% (1.94)	93% (1.68)	94% (1.63)	93% (1.67)	93% (1.70)	93% (1.67)
S6 Publication Rate with HZB Co-Authors	33%	32%	28%	30%	44%	43%
D: Creation of Demand						
D1 Number of New Departments	146	116	119	124	114	63
D2 Overbooking	180%	196%	197%	209%	193%	179%
D3 EU-Institutes	132	157	161	168	170	107
D4 Non-EU Institutes	58	78	98	95	112	86
D5 German Institutes	96	96	89	94	90	83
D6 Departments	409	396	412	403	405	306
D7 Fields of Work According to DFG	Yes, see D7 (page 45)					
D8 Number of Proposals (submitted)	1195	1199	1178	1559	1417	818 ⁴

² Due to the pandemic lockdowns the amount of beamtime available in 2020 was significantly lower than in previous years, while the number of publications stayed constant. This results in more publications per beamtime.

³ Compared to 2020 the amount of beamtime in 2021 more than doubled. This results in a higher number of shifts per publication since the publications also include previous years beamtimes.

⁴ In 2021 one proposal round was limited to urgent access due to corona backlog, which results in a smaller number of proposals.



Thank you very much for your attention

